

ABSTRACT

The system includes a transmitter for generating a signal and a cyclic prefix, wherein the transmitter suppresses a plurality of sub-symbols of the signal to produce a partial response signal. A portion of the partial response signal is dropped and the resulting truncated signal is used to modulate a carrier signal. The carrier signal is transmitted to the receiver through a noisy channel. The receiver receives a noisy signal and recovers the carrier signal and, hence, the partial response signal from the noisy signal. The method includes selecting a cyclic convolver having predefined values, applying the cyclic convolver to a signal to produce a partial response signal, dropping a plurality of sub-symbols of the partial response signal, appending a cyclic prefix at a leading edge of the truncated partial response signal, and transforming the truncated partial response signal with the cyclic prefix to produce a time base signal that is used to generate a modulated carrier signal that is ready for transmission.